ABSTRACT

An apparatus and method for converting a differential in thermal energy between a first thermal source having a thermal conducting fluid and a second thermal source having a thermal conducting fluid is provided. The apparatus emplys a first vessel and a second vessel. Each of the vessels contain a gas under pressure The vessels contain heat exchanging coils that are connected to the thermal sources by fluid lines. A plurality of cooperating valves regulate the flow of the thermal conducting fluid from the first and second thermal sources to the first and second vessels. The valves alternate between first and second operating positions. In the first position, the valves permit a flow of thermal conducting fluid from the first thermal source to the first vessel and from the second thermal source to the second vessel and prevent a flow of thermal conducting fluid from the first thermal source to the second vessel and from the second thermal source to the first vessel. In the second position, the valves permit a flow of thermal conducting fluid from the first thermal source to the second vessel and from the second thermal source to the first vessel and prevent a flow of thermal energy from the first thermal source to the first vessel and from the second thermal source to the second vessel. A pressure driven actuator in fluid communication with the first and second vessels is driven into reciprocating motion between a first position and a second position by alternating positive pressure and negative pressure from the first and second vessels.